

Applications and Analysis of Tree Pathology in Daily Life

Ottmar Holdenrieder*

Department of Environmental Sciences, Federal Institute of Technology, Zurich, Switzerland

DESCRIPTION

The investigation of diseases of woody plants living in wild woods, farms, tree nurseries, and urban settings is referred to as forest pathology. It is a discipline focused on understanding the nature of pathogen-caused tree illnesses and their insect vectors, as well as the ecology and biology of pathogenic organisms and infectious agents (fungi, oomycetes, bacteria, phytoplasma, viruses, nematodes, and protozoa) of forest trees. It is a forestry field that benefits the public and the environment by bringing scientific concepts to prevent and take control of tree illnesses. Forest tree illnesses are influenced by both biotic and abiotic variables. Fungal illnesses are the most extensively researched biotic component. Diseases and disorders carried on by air pollution, along with those managed to bring on by climatic and edaphic conditions, are among the most significant abiotic causes. The nature and symptoms of tree illnesses are also covered, along with the idea of disease in tree pathology. The various dietary habits and nutritional tactics of tree diseases were emphasized. Basic concepts governing wood deterioration and wound healing in living trees, as well as crucial elements of the disease resistance strategy used by forest trees to fend off phytopathogens, were also covered.

Root illnesses can be avoided by keeping plants healthy and preventing wounds in the root system and near the tree's base. It is tough to manage a root illness once it has infected a tree. To identify the extent of the infection, an in-depth examination of the root system near the trunk is required. Removal is advised in extreme instances where the majority of the roots are dead or the stem is nearly girdled. When only a few roots are infected, treatment can almost completely halt disease development. Because infected plants are frequently stressed, the vigour of the tree must be recovered. Regular watering and fertilization are advised, as is top trimming to compensate for root loss. If infected bark exists on buttress roots or the stem, it should be removed to expose healthy timber. Replanting in the same location after root disease mortality should be performed along with the removal of as much of the deceased stump and roots as

feasible. The pathogen-infested soil should be removed or fumigated. In general, newly established plants are vulnerable to root diseases. To safeguard nearby vulnerable woody plants from pathogen dissemination in the soil, soil fumigation or trenching should be performed around the infected tree.

Applications of tree root diseases

Abiotic and biotic inducers both exist (non-living and living). Based on the type of pathogen, biotic illnesses are further divided into subgroups (bacteria, fungi, viruses, phytoplasmas, nematodes, etc). It should be discussed that diseases are typically parasites in this situation. But not every parasite is a pathogen, and not every disease is a parasite. Thus, some parasites don't harm plants and, as a consequence, don't produce any diseases. Contrarily, parasites could be advantageous. Moreover, certain bacteria that live on earth don't parasitize plants; instead, they produce toxic byproducts that cause diseases in tree roots.

- The cause is determined by the trigger based on the afflicted species (poplar, conifer, pine, maple, etc).
- Specifying the affected area with a tree component. These include diseases of the leaves (foliage), stems (bark), and roots.
- Age of the tree, taking into account maturity level. There are growth disorders that affect young, seedling, and old trees.
- Prevention Before bud bursting, apply fungicide to the leaves or inject it into the boot. In addition, spraying freshly cut stumps will help to keep bugs and fungi away.
- Elimination and sanitation. In order to prevent new infections the following season, foliage must be removed and killed in the fall for the majority of tree leaf diseases.
- Bark beetles spread infectious fungus and destroy trees. Their populations are decreased by the introduction of biological adversaries (e.g., birds, mites, flies, wasps).
- Chemical management can be done depending on the culprit, spraying with fungicides, insecticides, etc.
- Planting hardy species that can cope with diseases and adapt.

Correspondence to: Ottmar Holdenrieder, Department of Environmental Sciences, Federal Institute of Technology, Zurich, Switzerland, E-mail: holdenrieder46@env.ethz.ch

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